

**Notice of Allowability**

Application No.

10/763,103

Applicant(s)

BLOTENBERG, WILFRIED

Examiner

Igor Kershteyn

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3745

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-4.
3. ☒ The drawings filed on 22 January 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>01/22/2004</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                 | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

***Reasons for allowance***

The following is an examiner's statement of reasons for allowance:

The instant invention is deemed to be directed to an unobvious improvement to a process of operation of turbocompressors over U.S. Patent No. 4,831,535 which teaches a process for the reliable operation of turbocompressors with surge limit control and a surge limit control valve, wherein the compressor delivers gases with different compositions and the composition of the gas (molecular weight) affects the performance characteristic of the turbocompressor and consequently the position of the surge limit in the performance characteristic, the process comprising: determining the set point and the actual value for the surge limit control from the graph plotted in the form of a predetermined surge limit; and operating the compressor with the determined set points and actual values for the surge limit control with a minimally necessary distance from the surge limit.

Regarding claim 1, the improvement comprises compensating the effect on the position of the surge limit and hence also on the position of the surge limit control line based on different compositions of the gases by using predetermined design values for the gas constant  $R$ , the isentropic exponent  $k$  and the compressibility number  $z$  within the surge limit control for determining the delivery head  $\Delta h$  and the volume flow  $V$  and plotted in the form of a predetermined surge limit within the surge limit control.

Regarding claim 4, the improvement comprises using a predetermined design value for the gas constant  $R$ , the isentropic exponent  $k$  and the

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compressibility number  $z$  within the surge limit control for the determination of the delivery head  $\Delta h$  and the volume flow  $V$  and plotted in the form of a predetermined surge limit within the surge limit control.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Prior Art***

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of two patents.

Frutschi (4,148,191) is cited to show a process of operation of compressor including determining set points for a surge limit and operating the compressor with a minimal distance from the surge limit but fails to teach compensating the effect on the position of the surge limit and hence also on the position of the surge limit control line based on different compositions of the gases by using predetermined design values for the gas constant  $R$ , the isentropic exponent  $k$  and the compressibility number  $z$  within the surge limit control for determining the delivery head  $\Delta h$  and the volume flow  $V$  and plotted in the form of a predetermined surge limit within the surge limit control.

Staroselsky et al. (5,743,715) is cited to show a process of operation of compressor including determining set points for a surge limit and operating the compressor with a minimal distance from the surge limit but fails to teach compensating the effect on the position of the surge limit and hence also on the

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position of the surge limit control line based on different compositions of the gases by using predetermined design values for the gas constant  $R$ , the isentropic exponent  $k$  and the compressibility number  $z$  within the surge limit control for determining the delivery head  $\Delta h$  and the volume flow  $V$  and plotted in the form of a predetermined surge limit within the surge limit control.

**Contact information**

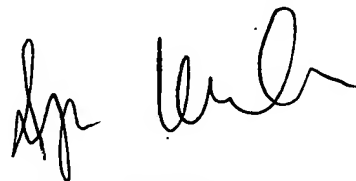
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is **(571)272-4817**. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on **(571)272-4820**. The fax number is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

**IK**

August 29, 2005



**Igor Kershteyn**  
**Patent examiner.**  
**Art Unit 3745**



**EDWARD K. LOOK**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3700**

9/2/05